2009 Annual Meeting of the Tennessee Bat Working Group Minutes

TWRA Region II Office, Nashville TN
12 November, 2009

Attendees

John Lamb – Arnold Air Force Base

Josh Campbell – TWRA

Michael Baker – BCI

David Hill – TN State Parks

Brian Carver – Freed Hardeman University

Garrett Ammons – Freed Hardeman University

Leanne Harbach – Freed Hardeman University

Sara Tucker – Freed Hardeman University

Spencer Savage – Freed Hardeman University

Chad Greene – Freed Hardeman University

David Pelren – USFWS

Scott Slankard – Eco-Tech Consultants

Lisa Powers – Froghaven Farm

Morgan Kurz – APSU

Geoff Call – USFWS

David Withers – TDEC

Dan Nolfi – National Park Service

Roger Applegate – TWRA

George Wyckoff – Arnold Air Force Base

Richard Kirk – TWRA

Trisha Johnson – TN Tech University

Kirk Miles – TWRA

Cory Holliday – TNC

Jim Hamlington – TWRA

Chad Harden – TWRA

Richard Connors – TN State Parks

Chris Simpson – TWRA

Tom Hallam – UTK

Gary McCracken – UTK

Holly LeGrand – TVA

Chrys Hulbert – Caver

Steve and Sara Samoray

Seth McCormick – APSU

Craig Walker – OSM

Ed Warr – TWRA

Laura Lewis – USFS

Sterling Daniels – TWRA

Pandy English – TWRA

Eric Britzke – ERDC

Joy O'Keefe - USFS

Agenda

9:00 – 9:20 National White-nose Syndrome Update. Eric Britzke

9:20 – 10:00 White-nose Syndrome Cooperative Monitoring and Response Plan for Tennessee. Richard Kirk

10:00 – 10:30 WNS: Perspectives from the Biology and Ecology of Bats. Gary McCracken

10:30 – 10:50 Survey and Monitoring Efforts for Bats in Tennessee. George Wyckoff, Josh Campbell, Chris Simpson, Sterling Daniels, Cory Holliday

Break

11:00 – 11:20 Using Acoustic Transects to Monitor Bat Population Trends in the Eastern United States. Eric Britzke and Carl Herzog

11:20 – 11:45 White-nose Syndrome Decontamination Procedures. Josh Campbell and Chris Simpson

11:45 – 12:15 White-nose Syndrome Discussion

12:15 – 1:15 Lunch

1:15 – 1:30 Indiana Bat Roost Habitat Selection in the Southern Appalachian Mountains. Joy O'Keefe and Susan Loeb

1:30 – 1:45 Range-wide Guidelines for the Protection of the Indiana Bat during Coal Mining Operations. Craig Walker

1:45 – 2:05 A Community-based Approach to Setting Conservation Goals and Objectives for Multiple Species on the Cumberland Plateau: How Habitat Needs for Bats are Being Incorporated into Forest Management on Wildlife Management Areas within the Northern Cumberlands. Mark Thurman, R. Kirk Miles, Sean M. Blomquist, and Trisha D. Johnson

Break

2:15 – 3:00 Business Meeting

Abstracts

Survey and Monitoring Efforts for Bats in Tennessee

George R. Wyckoff[1], Josh Campbell[2], Chris Simpson[2], Sterling Daniels[2], and Cory Holliday[3]
[1]Aerospace Testing Alliance, Arnold Air Force Base
[2]Tennessee Wildlife Resources Agency
[3]The Nature Conservancy

As WNS affected caves spread further south into VA, the need for a coordinated response plan in TN was realized. The goal of this plan was to coordinate the conservation community's response to WNS. Research and monitoring programs were initiated or continued, in order to provide baseline population data against which to measure anticipated WNS effects. Many procedures were modified to provide data from which to monitor the effects of possible WNS infection. Monitoring procedures and results from summer 2009 will be presented.

Using Acoustic Transects to Monitor Bat Population Trends in the Eastern United States

Eric R. Britzke and Carl Herzog. US Army Engineer Research and Development Center, Vicksburg, MS; New York State Department of Environmental Conservation, Albany, NY.

Bats are difficult to survey and except for a few species that congregate in large numbers in caves during hibernation, researchers have no idea of their population levels. Bat populations may be impacted by 2 relatively recent sources of mortality: White Nose Syndrome and wind energy development. While it is often easy for us to document the mortality of these 2 factors at a particular site, we lack the context needed to evaluate potential changes in bat populations. Therefore, conservation efforts could benefit from a method to enable population monitoring of multiple bat species on a broad geographic scale. Recording bat echolocation calls along a transect has been used in Europe to monitor bat populations. We applied this technique to sample with ultrasonic detectors as a vehicle drove a pre-determined route. Transects were typically ~ 48 km long, were travelled at 32 km/ hour and were sampled just after sunset on nights with suitable weather conditions, although there was flexibility in the design of transects to account for specific site requirements. Sampling was conducted 1-5 times per transect with most effort focused on the summer maternity season. Transects were sampled in 17 states, with the # of transects ranging from 1 – 50 per state. Thus far over 20,000 bat echolocation calls have been collected. This project will establish a baseline measure to which future surveys can be compared to assess population-level impacts that cannot be assessed in other ways.

WNS Decontamination Procedures

Josh Campbell, Tennessee Wildlife Resources Agency and Chris Simpson Tennessee Wildlife Resources Agency.

Although white-nose syndrome was discovered in 2006, relatively little is still known about this deadly fungus. As most know, this fungus has spread rapidly from the upper northeast to southern Virginia in less than three years. It is believed that recreational cavers and biologists have aided the spread of infectious agents from cave to cave. For this reason, in June 2009 containment and decontamination protocols were developed to aid in minimizing the spread of the fungus between caves. We will discuss

the two categories of equipment in the protocols and how to decontaminate equipment in each category. Although these protocols allow for minimal work to occur on vehicles, we recommend no work or decontamination take place on or near researchers' vehicles. Preparation and planning will be key to decontamination between cave visits. Decontamination procedures may change with new information obtained from ongoing research. Researchers are encouraged to check http://www.fws.gov/northeast/wnscavers.html periodically for updates to these protocols.

Indiana Bat Roost Habitat Selection in the Southern Appalachian Mountains

Joy O'Keefe and Susan Loeb, Southern Research Station, USDA Forest Service

Most research on the federally endangered Indiana bat (*Myotis sodalis*) has been conducted in the Midwest, which is considered to be the core of the species range. Little is known about the distribution and roost ecology of Indiana bats in the southern Appalachian Mountains, which is the southern extent of the species range. From 1996 to 2008, biologists gathered data on about 30 roosts in this region and found that Indiana bats roost primarily in beetle-killed yellow pines (*Pinus echinata*, *P. pungens*, *P. rigida*, or *P. virginiana*) and dead hemlocks (*Tsuga* sp.). More roost habitat selection data are needed to aid in the development of effective management strategies in the southern Appalachians. In June and July 2009, we used radio telemetry to study the roosting ecology of Indiana bats in Great Smoky Mountains National Park and the Cherokee and Nantahala National Forests in eastern Tennessee and western North Carolina. During 48 mist net sessions we captured 315 bats, including 46 Indiana bats (37 females and nine males). We attached 0.42 g radio transmitters to one adult male and 15 adult female Indiana bats and located 17 day roosts, which were mainly yellow pine (65%) or white pine (*P. strobus;* 18%) snags (2–77 bats in primary roosts). We compared tree and plot characteristics for maternity roost trees and random trees with roost potential. Roosts were taller, larger in diameter, and in a lower state of decay than random trees. Roosts had less bark remaining but more usable bark relative to bark remaining. Roosts had lower canopy closure and, hence, greater solar exposure directly above the tree but plot canopy closure was similar for roosts and random trees. Data for 2009 are consistent with data for previous studies in the region; Indiana bats appear to selectively roost in tall low-decay conifers that receive greater solar exposure than random trees. However, the use of white pine snags has not been documented previously and indicates that Indiana bats in the southern Appalachians may have a broader roosting niche than suggested by earlier data. We are continuing our research with a three year study in the same study area to investigate the compatibility of fire management with the conservation and recovery of the Indiana bat in the southern Appalachian Mountains.

Range-wide Guidelines for the Protection of the Indiana Bat during Coal Mining Operations

Craig Walker, Office of Surface Mining

In 1996 the U.S. Fish and Wildlife Service (FWS) issued a Biological Opinion for the Office of Surface Mining (OSM) that requires the FWS and each state that regulates coal mining, with the involvement of OSM and the permittee as appropriate, to develop species specific protective measures for federally listed threatened and endangered species. The federally endangered Indiana bat occurs in 13 coal mining states in the Appalachian and Midwestern regions. Due to inconsistent implementation across its range of the requirements for protecting the Indiana bat, an inter-agency team was formed to develop range-wide guidelines for the development of protection and enhancement plans. The guidelines provide information on survey methodology, habitat assessment, avoidance measures, tree clearing restrictions, habitat enhancement, and other measures. The guidelines provide a "cookbook" for the

permittees to follow in the development of their protection and enhancement plans .The agencies have agreed that satisfactory implementation of the guidelines will satisfy the consultation requirements under section 7 of the Endangered Species Act for coal mining related activities of other federal agencies, including the Corps of Engineers permitting process for section 404 of the Clean Water Act.

A Community-based Approach to Setting Conservation Goals and Objectives for Multiple Species on the Cumberland Plateau: How Habitat Needs for Bats are Being Incorporated into Forest Management on Wildlife Management Areas within the Northern Cumberlands

Mark Thurman[1], R. Kirk Miles[1], Sean M. Blomquist[2], and Trisha D. Johnson[2].
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[2]Tennessee Technological University, Box 5063, Cookeville, TN 38505

The Cumberland Mountains and Plateau Region in northern Tennessee are home to rich natural resources and support resource uses including forestry, agriculture, coal mining, oil and gas production, and water supply. We are currently developing the Northern Cumberlands Forest Resources Habitat Conservation Plan to address the potential effects of forest management activities (e.g., timber harvest, road maintenance) on 39 species in the Cumberlands. We will provide an example of how agency biologists and university scientists formed a team to work with species experts, foresters, and land managers to generate biological goals and objectives for conservation planning and assess the impacts of forest management activities on the 39 target species. Of the 39 current species, three are bats; the federally endangered Indiana bat, eastern small-footed bat and Rafinesque's big-eared bat. Developing management strategies for such a large list that covers aquatic and terrestrial species presented a challenge. To address this challenge, we formed ecological communities, and conservation goals and objectives were developed for each community. These bats are members of 4 communities; forest interior, isolated wetlands, perennial headwater aquatic and forested riparian systems (1^{st} – 3^{rd} Order Streams), and perennial mainstream aquatic and forested riparian systems (≥ 4^{th} Order Streams). This presentation will give an overview of the conservation goals and objectives for these communities.

Business Meeting

WNS Discussion: The majority of discussion this year revolved around white nose syndrome in various ways. From issues brought up during the decontamination demonstration to proposed survey and monitoring efforts. As WNS is suspected to be documented in TN this winter, many of these issues will be brought back up and rehashed over the next year.

Around the room updates:

Austin Peay – Dunbar cave work is ongoing. 127 bats have been banded and they have begun running AnaBat transects on LBL.

UT, Dr. Gary McCracken – Identified a Mexican free-tailed bat and an Egyptian fruit bat from submissions to the state health departments. (Seth McCormick of APSU found a Mexican free-tailed bat this year at Austin Peay). Dr. McCracken volunteered UT to serve as a data coordination hub, offering UT facilities to gather and disperse data. UT could also create and distribute brochures on WNS.

BCI, Michael Baker – BCI is working with various groups on WNS issues, TN is interested in the Beam Break technology and if funding is acquired will likely be a location to deploy these systems.

TVA, Holly LeGrand – Recently issued a cave closure for all lands owned by TVA.

TNC, Cory Holliday – TNC is focused on WNS issues.

TDEC, Dave Withers – Please make sure that data that belongs in the heritage databases get to TDEC for inclusion into those databases.

Other meeting items:

Website Updates:

- WNS page and links are under development, should be up some time in January.
- Bat Education Boxes – Information is on the website, but use is still low. Please use the boxes yourselves, if needed, or advertise them to other folks that can use them (teachers, nature centers, etc…).
- Bat Houses section of page is under development and should be up soon.

Teachers Guide to “Bats of Tennessee” is under development and currently out for review by area teachers.

“Bats of Tennessee” Poster

- We still need photos for some species. If we cannot get photos from our members, for all the bats in TN, we will try and get permission to use some from the current “Bats of the Eastern US” poster. But I would prefer to have all of the photos from our members so please get out the cameras and send me what you get.

- We **HAVE** photos for: little brown bat, gray bat, Indiana bat, small-footed bat, tricolored bat, rafinesque's bat, red bat, hoary bat, and evening bat.
- We **NEED** photos for: southeastern bat, northern long-eared bat, big brown bat, townsend's big-eared bat, seminole bat, silver-haired bat, and free-tailed bat

Elections: Next year is an election year so Pandy will be sending out nomination forms, etc… soon. Please think about running for a position. It is an exciting time (for some unfortunate reasons) in the bat world so why not help out and donate some of your time to an important cause.

Next Year's Annual Meeting will be held on November 18th at the Stones River Hunter Education Center. Go ahead and start thinking about what you would like to present. Any ideas for talks can be sent to me at any time (George.wyckoff@arnold.af.mil).